

TUNE-UP

ENGINE IDENTIFICATION

The Engine Identification Number is located on left side, upper front corner of block on four cylinder engines. On 258" six cylinder engine it is on right side of crankcase, adjacent to distributor. The cubic inch displacement is indicated by first four or five digits on four cylinder engine and by a letter code on the six cylinder engine.

Application	Digits or Letter Code
196"	4-196
258"	A

MODEL IDENTIFICATION

Number is located on rear face of left front door.

613105H587201

First Four Digits - Model Code.

Fifth Digit - Engine Type.

Sixth Digit - Cab or Body Type.

Remaining Digits - Chassis Serial Number.

TUNE-UP NOTES

► **IDLE SPEED ADJUSTMENT CAUTION** - Procedures and specifications for idle speed adjustment must be followed exactly as outlined. See "Hot (Slow) Idle RPM" under Tune-Up.

NOTE - For other items affecting Tune-Up, see CARBURETION Section or EMISSION CONTROL Section.

NOTE - Due to changes and corrections, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, decal specifications prevail.

COMPRESSION PRESSURE

With engine warm, all spark plugs removed and throttle wide open, the maximum variation between cylinders should not exceed 10 psi.

Application	PSI
196"	140
258"	185

VALVE TAPPET CLEARANCE

Application	Clearance (Hot)
All Hydraulic.....	Zero Lash

VALVE ARRANGEMENT

4 Cyl. - E-I-E-I-E-I-E-I (Front to rear.)

6 Cyl. - E-I-I-E-I-E-E-I-E-I-E (Front to rear.)

SPARK PLUGS

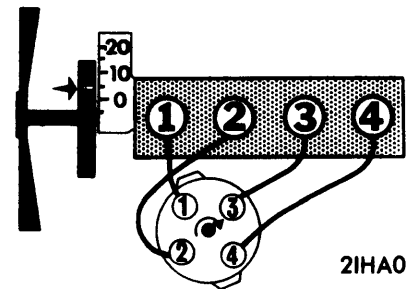
Gap	
4 Cyl.030"
6 Cyl.035"
Torque	
4 Cyl.	28-30 ft. lbs.
6 Cyl.	25-30 ft. lbs.

Spark Plug Type

Application	Champion No.
196"	J-10Y
258"	RN-12Y

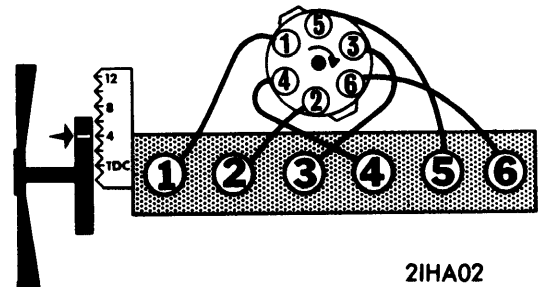
DISTRIBUTOR

Point Gap	
All Used016"
All New.....	.019"
Cam Angle	
196"	42-48°
258"	31-34°
Breaker Arm Spring Tension	
196"	17-20 ozs.
258"	17-21 ozs.
Condenser Capacity18-.23 mfd.



21HA01

FIRING ORDER & TIMING MARKS 4 CYL.



21HA02

FIRING ORDER & TIMING MARKS 6 CYL.

IGNITION TIMING

Check or adjust timing with engine at normal operating temperature, distributor vacuum advance line disconnected and plugged, transmission in Neutral, and hot (slow) idle speed set.

Application	Timing
All	TDC

HOT (SLOW) IDLE SPEED

NOTE - When setting idle mixture, do not allow engine to idle more than three minutes without increasing engine speed to 2000 RPM for one minute before continuing with adjustment procedure.

With vehicle level, engine at normal operating temperature, choke open, air cleaner installed, air conditioning "ON" and manual transmission in Neutral or automatic transmission in "D", connect tachometer to engine. Turn idle mixture screw

TUNE-UP (Cont.)

counterclockwise (out) against its tab stop and attach vacuum gauge to engine. Adjust idle speed 20-40 RPM faster than specifications. Turn idle mixture screw clockwise (in) to reduce idle speed to specifications. If idle adjustment cannot be made due to limiter cap, remove it and use the following procedure. Turn mixture screw in just to the point that idle RPM starts to drop and install new limiter cap fully counterclockwise against tab stop. Adjust idle speed 20-40 RPM faster than specifications. Turn idle mixture screw clockwise (in) to reduce idle speed to specifications.

Idle Speed (RPM)

Application	RPM
Man. Trans.	700
Auto. Trans. (in "D")	550

COLD (FAST) IDLE RPM

Man. Choke — The cold (fast) idle speed is set when hot (slow) idle speed and manual choke are properly adjusted.

Auto. Choke 4 Cyl. — With hot (slow) idle set and engine at normal operating temperature, turn fast idle screw in until screw just touches fast idle cam. Back screw out 1/2 to one turn.

Auto. Choke 6 Cyl. — With hot (slow) idle set and engine at normal operating temperature, place fast idle adjusting screw on highest step of fast idle cam. Adjust screw to obtain engine speed of 2000 RPM.

CHOKE ADJUSTMENT

Man. Choke — Loosen choke cable adjusting screw on choke lever at carburetor. With choke knob in cab all the way in, pull choke cable at carburetor to remove excess slack. Release cable and tighten screw. Work knob in and out several times and check that choke is full open when knob is all the way in.

DISTRIBUTOR

Application	①IHC Part No.
196"	360724-C91

① — Manufactured by Holley.

Application	Delco Part No.
258"	1110497

IGNITION

Other Data & Specifications — See Tune-Up and Holley or Delco Distributors in ELECTRICAL Section.

IGNITION COIL

Application	IHC Part No.
All	191455-C91

CARBURETION

CARBURETORS

Holley Series 1920 1-Bbl.

Application	Holley Part No.	
	Man. Trans.	Auto. Trans.
196"	R-6319	R-6319
258"	R-6442	R-6442

Other Data & Specifications — See Tune-Up and Holley Carburetors in CARBURETION Section.

ACCELERATOR AND DOWNSHIFT LINKAGE ADJUSTMENT

Accelerator Adjustment — With accelerator linkage clean and lubricated, adjust pedal stop screw so that pedal will just strike screw when carburetor throttle plate is wide open.

Auto. Choke 4 Cyl. — Non-adjustable. Check for freedom of movement of choke linkage; if binding occurs, replace linkage and thermostat in manifold well.

Auto. Choke 6 Cyl. — Loosen choke cover retaining screws. Rotate cover to one notch rich and tighten cover retaining screws.

DASHPOT ADJUSTMENT

With engine at normal operating temperature and idle speed set, check to see that dashpot stem is fully depressed. Set the dashpot adjusting screw to the clearance specified.

Dashpot Clearance

Application	Clearance
196"075-.105"
258"070-.090"

FUEL PUMP PRESSURE & VOLUME

Pressure (At 1000 RPM)①	4-5.5 psi
Volume	
196" (At 4000 RPM).....	3.2 pts. in 1 min.
258" (At 2000 RPM).....	3.6 pts. in 1 min.

① — Fuel pressure test must be taken at carburetor inlet height.

MANIFOLD HEAT CONTROL VALVE

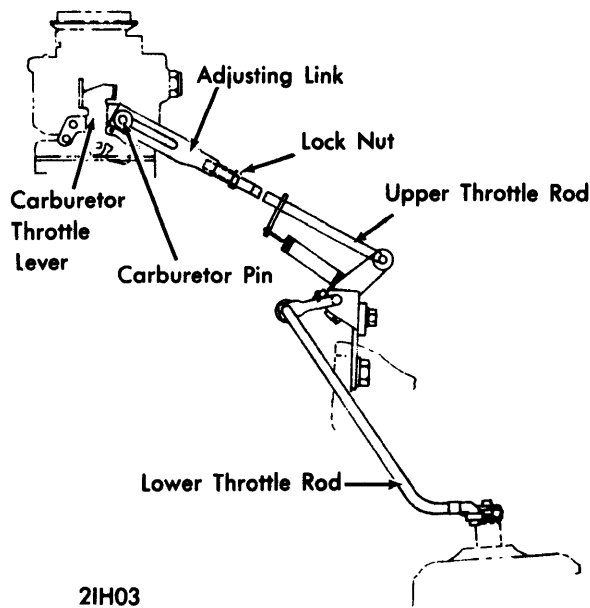
Check valve periodically for spring tension and freedom of operation.

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

Downshift Linkage Adjustment 4 Cyl. — Block choke valve in full open position and check that dashpot or throttle modulator on carburetor is not touching throttle lever of carburetor. Loosen lock nut on adjusting link, remove fastener from carburetor pin, and disconnect transmission throttle rod return spring. Hold lower throttle rod forward and adjust link of upper throttle rod so that carburetor pin contacts forward end of slot in adjusting link. Tighten lock nut and install fastener. Check throttle rod linkage for freedom of operation by rotating throttle lever on carburetor in counterclockwise direction to full open position; hold upper throttle rod and allow carburetor to return to idle position. Then release upper throttle rod and allow it to return slowly, making sure it returns to the full rearward position.

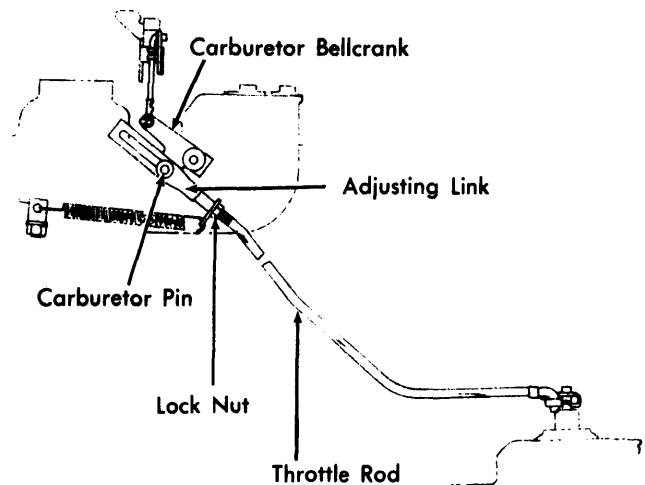
CARBURETION (Cont.)



21H03
DOWNSHIFT LINKAGE ADJUSTMENT 4 CYL.

Downshift Linkage Adjustment 6 Cyl. — Block choke valve in full open position and check that dashpot or throttle modulator on carburetor is not touching throttle lever of carburetor. Loosen lock nut on adjusting link, remove fastener from carburetor pin, and disconnect transmission throttle rod

return spring. Hold throttle rod forward and adjust link so that carburetor pin contacts rear of slot in link. Tighten lock nut, install fastener, and reconnect return spring. Check throttle rod linkage for freedom of movement by rotating bellcrank in counterclockwise direction to full open position; hold throttle rod and allow bellcrank to return to idle position. Then release throttle rod and allow it to return slowly, making sure it returns to the full forward position.



21H04
DOWNSHIFT LINKAGE ADJUSTMENT 6 CYL.

ELECTRICAL

BATTERY

12 Volt — Negative Ground.

STARTER

Application	Delco Part No.
196"	1107709
258"	1108478

Other Data & Specifications — See *Delco Starters in ELECTRICAL Section.*

ALTERNATOR

Application	Amps.	Delco Part No.
All	37	1100599

Other Data & Specifications — See *Delco Alternators in ELECTRICAL Section.*

ALTERNATOR REGULATOR

Delco — Nonadjustable, integral with alternator.

Other Data & Specifications — See *Delco Alternator Regulators in ELECTRICAL Section.*

ENGINE

INTAKE MANIFOLD TIGHTENING

4 Cyl. — Manifold bolts are tightened to 40-45 ft. lbs.

6 Cyl. — Manifold bolts and stud nuts are tightened to 20-25 ft. lbs.

BELT ADJUSTMENT

Adjust power steering belt tension to obtain $\frac{3}{8}$ inch deflection at belt midpoint; adjust all other belts for $\frac{1}{2}$ inch deflection.

ENGINE (Cont.)

**CAPACITIES
(EXCEPT COOLING)**

Application	Quantity
Crankcase	
Scout.....	①5 qts.
All Others	①4 qts.
Automatic Transmission.....	9.5 qts.
Man. Trans. & Rear Axle	②
Front Axle & Transfer Case	②
Four Wheel Drive Knuckle Ends.....	②
Fuel Tank	
Scout.....	19 gals.
Conventional Cab	
1010 & 1110	15 gals.
1210 & 1310.....	16 gals.
Utility Body	13 gals.
Travelall	
1010 & 1110.....	20 gals.
1210 & 1310.....	21 gals.
Metro	
Std.	23 gals.
Opt.	35 gals.

- ① - Add 1 quart with filter change.
 ② - Fill to bottom of filler plug hole.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	①Replace 3,000-4,000
Air Filter	
Paper Element.....	②Clean 4,000
Paper Element W/Polyurethane Band....	②Clean 4,000
PCV Valve.....	Clean 12,000
Vapor Storage Canister Filter.....	Replace 12,000
Fuel Filter.....	③

- ① - Or every oil change.
 ② - Replace element at 12,000 miles.
 ③ - Replace when bowl shows sediment.

COOLING CAPACITIES

Application	Quantity
Scout (Includes Heater)	
4 Cyl.	14 qts.
6 Cyl.	11.5 qts.
All Others	①11 qts.

- ① - Add 1 quart if equipped with heater.